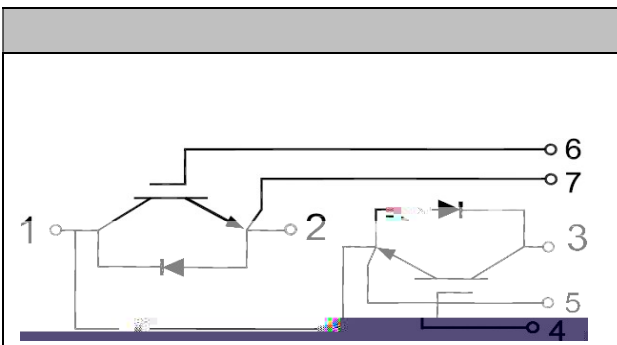




1200V
40A

- High frequency drivers
- Solar inverters
- UPS (Uninterruptible Power Supplies)
- Electric welding machine



- High speed IGBT in NPT technology
- Low switching losses
- High short circuit capability(10us)
- Including ultra fast & soft recovery anti-parallel FWD
- Low inductance
- Maximum junction temperature 150°C

Collector-Emitter Voltage	V_{CES}	$V_{GE}=0V, I_C=1mA, T_{vj}=25^{\circ}C$	1200	V
Continuous Collector Current	I_C	$T_c=80^{\circ}C$	40	A
Repetitive Peak Collector Current	I_{CRM}	$t_p=1ms$	80	A
Gate-Emitter Voltage	V_{GES}	$T_{vj}=25^{\circ}C$	± 20	V
Total Power Dissipation	P_{tot}	$T_c=25^{\circ}C$ $T_{vjmax}=150^{\circ}C$	312	W

Gate-emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}, I_C=1.6mA, T_{vj}=25^{\circ}C$	5.0	5.8	6.5	V	
Collector-Emitter Cut-off Current	I_{CES}	$V_{CE}=1200V, V_{GE}=0V, T_{vj}=25^{\circ}C$			1.0	mA	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=40A, V_{GE}=15V, T_{vj}=25^{\circ}C$		2.0	3.5	V	
		$I_C=40A, V_{GE}=15V, T_{vj}=125^{\circ}C$		2.3			
Input Capacitance	C_{ies}	$V_{CE}=25V, V_{GE}=0V,$ $f=1MHz, T_{vj}=25^{\circ}C$		3.5		nF	
Reverse Transfer Capacitance	C_{res}				0.2		nF
Gate-Emitter leakage current	I_{GES}	$V_{CE}=0V, V_{GE}=20V, T_{vj}=25^{\circ}C$			400	nA	
Turn-on Delay Time	$t_{d(on)}$	$I_C=40A$ $V_{CE}=600V$ $V_{GE}=\pm 15V$ $R_{GON}=10\Omega$ $R_{GOFF}=5.1\Omega$ $L_s=35nH$ $L_d=320uH$ $T_{vj}=25^{\circ}C$		21		ns	
Rise Time	t_r				42		ns
Turn-off Delay Time	$t_{d(off)}$				192		ns
Fall Time	t_f				28		ns
Energy Dissipation During Turn-on Time	E_{on}				3.7		mJ
Energy Dissipation During Turn-off Time	E_{off}				1.5		mJ
Turn-on Delay Time	$t_{d(on)}$		$I_C=40A$ $V_{CE}=600V$ $V_{GE}=\pm 15V$ $R_{GON}=10\Omega$ $R_{GOFF}=5.1\Omega$ $L_s=35nH$ $L_d=320uH$ $T_{vj}=125^{\circ}C$		28		ns
Rise Time	t_r				45		ns
Turn-off Delay Time	$t_{d(off)}$				250		ns
Fall Time	t_f				30		ns
Energy Dissipation During Turn-on Time	E_{on}				5.1		mJ
Energy Dissipation During Turn-off Time	E_{off}				2.2		mJ
SC Data	I_{sc}	$T_p \leq 10\mu s, V_{GE}=15V, T_{vj}=125^{\circ}C,$ $V_{cc}=600V, V_{CEM} \leq 1200V$			240		A

Repetitive Peak Reverse Voltage	V_{RRM}	$T_{vj}=25^{\circ}\text{C}$	1200	V
Continuous DC Forward Current	I_F		40	A
Repetitive Peak Forward Current	I_{FRM}	$t_p=1\text{ms}$	80	A

Forward Voltage	V_F	$I_F=40\text{A}, T_{vj}=25^{\circ}\text{C}$		1.85	2.10	V
		$I_F=40\text{A}, T_{vj}=125^{\circ}\text{C}$		1.80		
Recovered Charge	Q_{rr}	$I_F=40\text{A}$		2.85		μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=900\text{A}/\mu\text{s}$		45		A
Reverse Recovery Energy	E_{rec}	$T_{vj}=25^{\circ}\text{C}$		0.80		mJ
Recovered Charge	Q_{rr}	$I_F=40\text{A}$		5.16		μC
Peak Reverse Recovery Current	I_{rr}	$V_R=600\text{V}$ $-di_F/dt=900\text{A}/\mu\text{s}$		50		A
Reverse Recovery Energy	E_{rec}	$T_{vj}=125^{\circ}\text{C}$		1.55		mJ

Isolation voltage	V_{isol}	$t=1min, f=50Hz$	2500			V
Maximum Junction Temperature	T_{jmax}				150	°C
Operating Junction Temperature	$T_{vj op}$		-40		125	°C
Storage Temperature	T_{stg}		-40		125	°C
Thermal Resistance Junction-to Case	$R_{\theta JC}$	per IGBT				K/W
		per Diode				
Thermal Resistance Case-to Sink	$R_{\theta CS}$	Conductive grease applied		0.05		K/W
Module Electrodes Torque	M_t	Recommended(M5)	2.5		5.0	N·m
Module-to-Sink Torque	M_s	Recommended(M6)	3.0		5.0	N·m
Weight of Module	G			150		g

